

List of Abbreviation

Abbreviations	Full Form
ASTM	American Society for Testing and Materials
BSE	Back-Scattered Electron
CCT	Continuous cooling transformation
Coeff	Coefficient
DAS	Dendritic arm spacing
EDX/EDS	Energy-Dispersive X-ray Spectroscopy
EL	Elongation
ESS	Early-stage solidification
FCC	Face Centre Cubic
FSP	Friction Stir Processing
FSW	Friction Stir Welding
GP	Guinier-Preston
h	Hour
HAB	High Angle Grain Boundaries
HCP	Hexagonal Close Pack
HT	Heat treatment
IDC	Inter-dendritic channel
LSS	Last-stage solidification
Max.	Maximum
min	Minute

Min.	Minimum
MSS	Middle-stage solidification
OM	Optical Microscopy
ppt	Precipitate
RA	Reduction in area
s	Second
S/L	Solid-liquid
SCC	Stress Corrosion Cracking
SE	Secondary Electron
SEM	Scanning Electron Microscopy
SPD	Severely Plastic deformation
TTT	Time-temperature-transformation
UTS	Ultimate Tensile Strength
XRD	X-Ray Diffraction
YS	Yield Strength

List of Symbols

Symbol	Description
Al	Aluminium
amp	Ampere
BSE	Back Scattered Electron
cc	cubic centimetre
Co	Cobalt
Cr	Chromium
Cu	Copper
d	diameter
E	Young's Modulus
El	Elongation
et al.	and others
Fe	Iron
g	Gram
GPa	Giga Pascal
H ₂	Hydrogen
Hv	Vickers Hardness
K	Kelvin
kg	Kilogram
kgf	Kilogram-Force
kJ	Kilo-Joules

kN	Kilo-Newton
l	Length
m	Meter
Mg	Magnesium
mg	Milligram
min	minute
ml	millilitre
mm	millimetre
Mn	Manganese
Mo	Molybdenum
MPa	Mega Pascal
N	Newton
Ni	Nickel
Nm	Newton Meter
No.	Number
psi	pounds per square inch
rpm	Rotation per Minute
sec	second
Si	Silicon
t	thickness
Ti	Titanium
TiO ₂	Titanium oxide

V	Volt
Vol. %	Volume Percent
W	Tungsten
W/mK	Watt per meter Kelvin
Wt. %	Weight Percent
Zn	Zinc
Zr	Zirconium
ZrO ₂	Zirconium oxide
ZrTiO ₄	Zirconium Titanate